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Thumb Based Health Monitoring System

Vaishnavi Ghodke[1], Ambushree Bhandari[2], Pragati Godase[3], Prof.B.V.Jadhav[4]
[1, 2, 3] *Student of Computer Department Pimpri Chichwad Polytechnic*
[4] *Prof. of Computer Department Pimpri Chichwad Polytechnic*

Abstract: ***With digitization there is a plenty of personal information, such as, health records and personal artifacts that are stored on paper. Now days, most of clinical trials data are being collected on paper records. Moreover, the users no longer have complete control over their own data. We propose an alternative architecture where the data is no longer stored on paper, which is stored on server with the help of thumb. We developed a system which will provide the medical details of any user at any time. The data of the user will be stored on a secured storage. The doctors can be validated and added by the admin. When enquired by doctor the full medical history of the user will be displayed and doctor can even add new medical record to it. Users can view there medical records anytime and anywhere. The AES algorithm is used for uploading and retrieving the data from there.***
Keyword: Android phone, Fingerprint Reader, HDFS.

I. INTRODUCTION

Whenever there is an emergency in the hospital the doctor have to search all the details of the particular patient which is so much time consuming. For example a person is suffering from a particular disease and goes to the hospital for the checkups.So the normal procedure will be the doctor will ask for so many checkups which is again so much time consuming. There is no intelligence of the software in such cases. In the existing system all the patient details and regarding the tests done to the patients prescribed by the doctor is maintained manually by the receptionist. Also there is no proper search technique to check the patient information.

The system entails facilitating better health record services using thumb enabled devices. The thumb enabled devices offer an easy and secure way for self-reporting of health status information. Thumb is used to collect important information about the patient such as the blood sugar count, pulse rate, ECG etc. Thus the doctor can access the patient's data through just a tap. Medical data is confidential information that must not openly be available to anyone with physical access to the storage media. We make a technology to provide secure and quick access to medical information.

It is very important for the treating doctor to properly document the patient under his care. Medical records form an important part of the of a patient. It is important for the doctors and medical establishments to properly maintain the records of patient. It will help them in the scientific evaluation of their patient profile, helping in analyzing the treatment results, and to plan treatment protocols. Medical records include a variety of documentation of patient's history, clinical findings, diagnostic test results, preoperative care, operation notes, post operative care.

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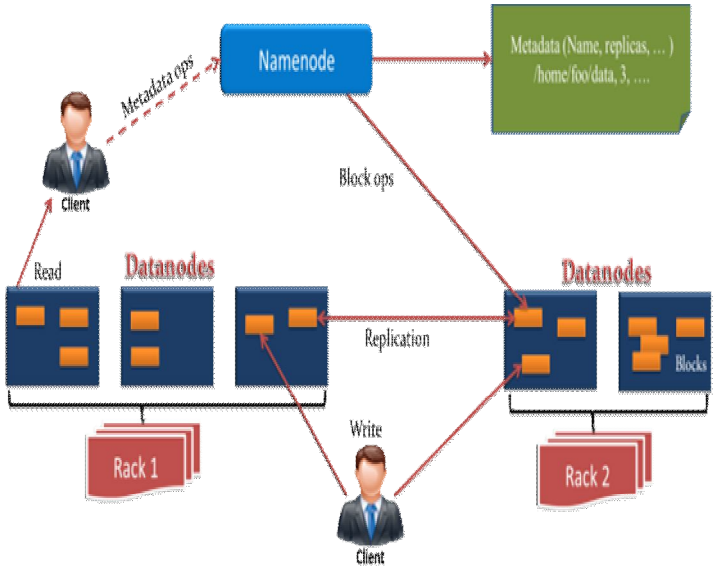
II. LITERATURE REVIEWS

DSePHR is proposed in this work to handle the encrypted PHR data on a cloud storage. HBase and Hadoop are used in the proposed DSePHR. Large files will be stored on HDFS while small files are stored on HBase to solve the Namenode memory issues in HDFS. Several configuration of JVM, HBase and Hadoop are made in order to achieve the goal of the DSePHR. The encrypted PHR metadata is stored on HBase. A new HBase schema is designed and implemented in this work in order to support the PHR accessing patterns. Specifically, the PHR data is typically accessed according to the PHR owner and the PHR arrival time attributes. The experimental results show that HBase schema developed in this work can correctly classify the encrypted PHR data and sends the data to an appropriated storage. The DSePHR does not encounter the Namenode memory issues in HDFS during the whole experiment period. The average retrieving and accessing time of various files shows that DSePHR takes similar time to response to each request even when the number of files in the system is increased. Future work includes a further investigate the effect of each configuration, the effect of the HBase scheme developed on the DSePHR performance and the performance when multiple users accessing and retrieving simultaneously.



In this work, they investigated how PHRs of individuals can be stored on PDSs such that individuals have more control over their data. The data of an individual is stored on the owner's PDS and it is replicated on the PDS of one or more individuals who are trusted by the owner.

In this paper, they presented a custom Web-based EDC system that they developed to support ESOPE clinical trials and also the usability evaluation of the system done through the questionnaire answered by users after using the system for 13 months. This EDC system had to enable data collection and frequent intermediate data analysis during at least two years of multicenter clinical trial.

The convolution and haphazardness of DNA based encryption provides a great ambiguity which makes it better than other mechanism of cryptography. Integrating DNA based encryption along with magic square scrambling helps in a double fold security. The proposed Encryption Scheme is easy to implement and can resist brute-force, statistical and differential attack and is suitable for the secure storage and transmission of health-care records.

In this paper, they have proposed a novel access control scheme to realize patient-centric privacy of personal health records in cloud computing. Considering semi-trusted cloud servers, we argue that patients shall have full control of their own privacy through encrypting their PHR files to allow fine-grained access control. The system addresses the unique challenges brought by multiple PHR owners and users, in that we greatly reduce the complexity of key management when the number of the owners and users in the system is very large. We utilize hierarchical and multi-authority attribute-sets based encryption to encrypt the PHR data, so that patients can allow access not only to personal users, but also to various users from different public domains with different professional roles, qualifications and affiliations. In our PHR sharing system, a user only has a secret key. But in practice, a user may have multiple roles, for example, a doctor is also the patient's relative or friend. So an important future work will be preventing unauthorized access control of users of multiple roles.

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III. DESIGN AND PROPOSED SYSTEM

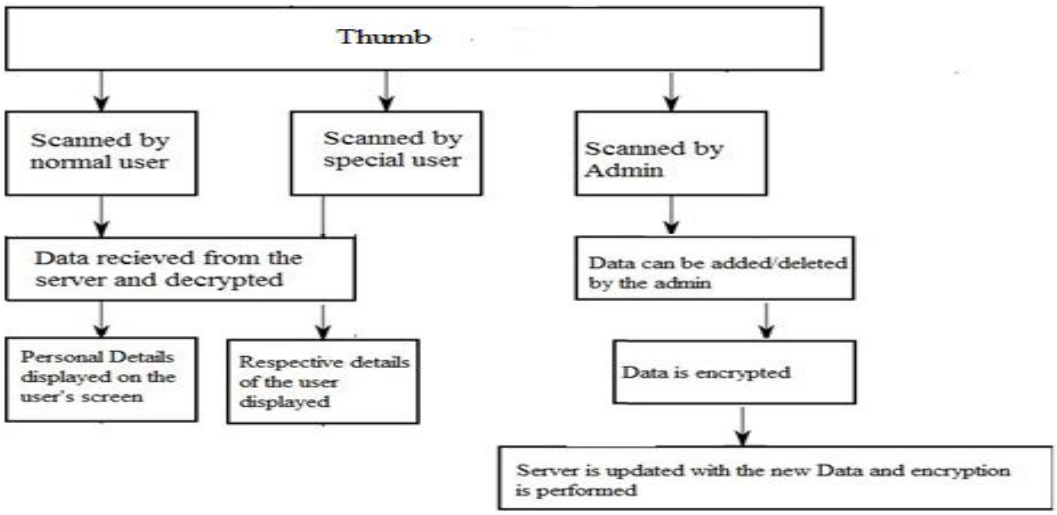

Fig. System Architecture

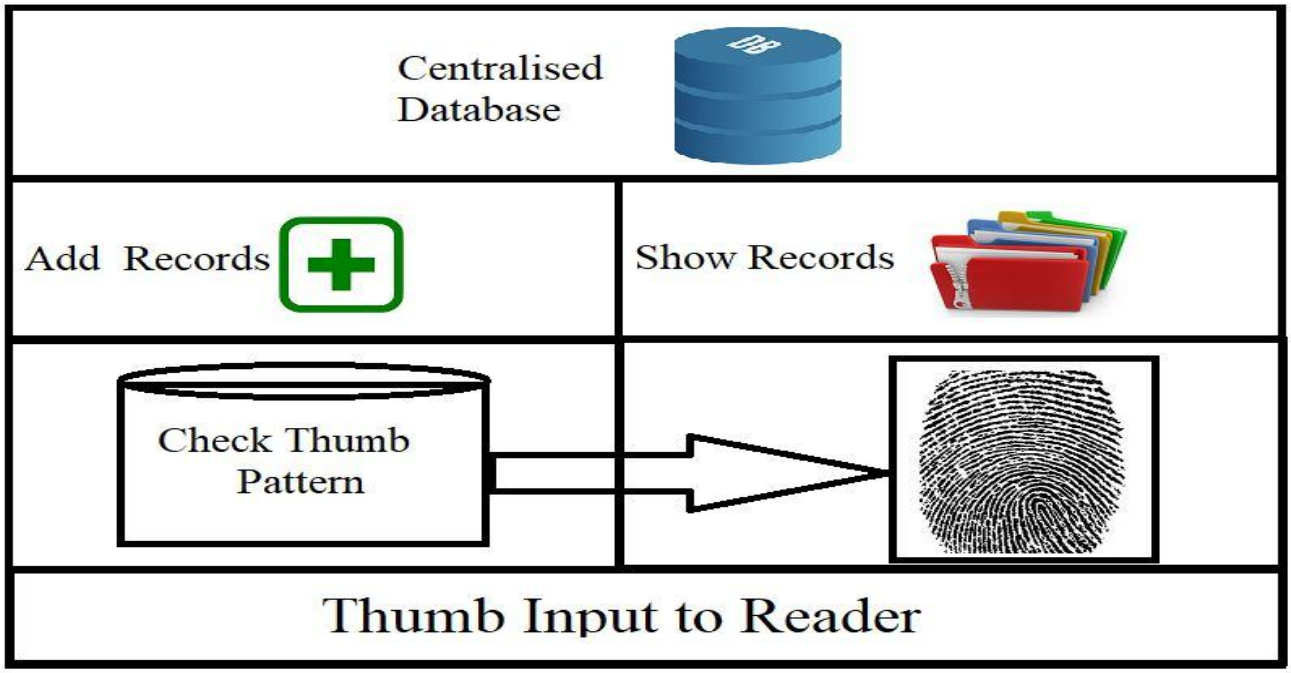

Fig. System Diagram

A. Admin Module

1) Add the details and info of each user and doctor on the system.
2) Provide the Id and password to all the users of the system.
3) Validate the information available.
4) Edit the information about users or doctors.

B. Doctor Module

1) Login to the system using Password provided by admin.
2) Scan the Fingerprint of the user so as to get the info of it.

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3) When scanned any fingerprint only the medical info of that corresponding user is displayed to doctor.
4) The doctor can add any new medical record of the user along with the documents.
5) Whenever the user scans the fingerprint under doctor's portal the location of the user will be sent to the emergency Emergency numbers saved in the application. So as to inform that the user has gone through some accident or illness.

C. User Module

1) Login to the system using Password provided by admin.
2) Scan the fingerprint of self or other user so as to get the info.
3) When scanned any fingerprint only the contact and basic info of the user is displayed along with his/her past medical B records. This is useful in case of accidents where immediate contact should be done to the user's relatives.

IV. TECHNOLOGY USED FINGERPRINT SCANNER

A fingerprint in its narrow sense is an impression left by the friction ridges of a human finger .The recovery of fingerprint from a crime scene is an important method of forensic science. Fingerprints are easily deposited on suitable surfaces (such as glass or metal or polished stone) by the natural secretions of sweat from the eccrine glands that are present in epidermal ridges. These are sometimes referred to as "Chanced Impressions". In a wider use of the term, fingerprints are the traces of an impression from the friction ridges of any part of a human or other primate hand. A print from the sole of the foot can also leave an impression of friction ridges. Deliberate impressions of fingerprints may be formed by ink or other substances transferred from the peaks of friction ridges on the skin to a relatively smooth surface such as a fingerprint card. Fingerprint records normally contain impressions from the pad on the last joint of fingers and thumbs, although fingerprint cards also typically record portions of lower joint areas of the fingers.

Human fingerprints are detailed, nearly unique, difficult to alter, and durable over the life of an individual, making them suitable as long-term markers of human identity. They may be employed by police or other authorities to identify individuals who wish to conceal their identity, or to identify people who are incapacitated or deceased and thus unable to identify themselves, as in the aftermath of a natural disaster.

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V. ADVANTAGES

A. Easy to implement and managed.
B. Increase productivity.
C. Eliminates human error.
D. Increase security.

VI. DISADVANTAGES

A. No option for document storage using biometrics.

VII. CONCLUSION

The main aim of the project is to make a system which will provide the medical details of any user at any time. The data of the user will be stored on a secured cloud storage. The doctors can be validated and added by the admin. When enquired by doctor the full medical history of the user will be displayed and doctor can even add new medical record to it. Users can view there medical records anytime and anywhere.

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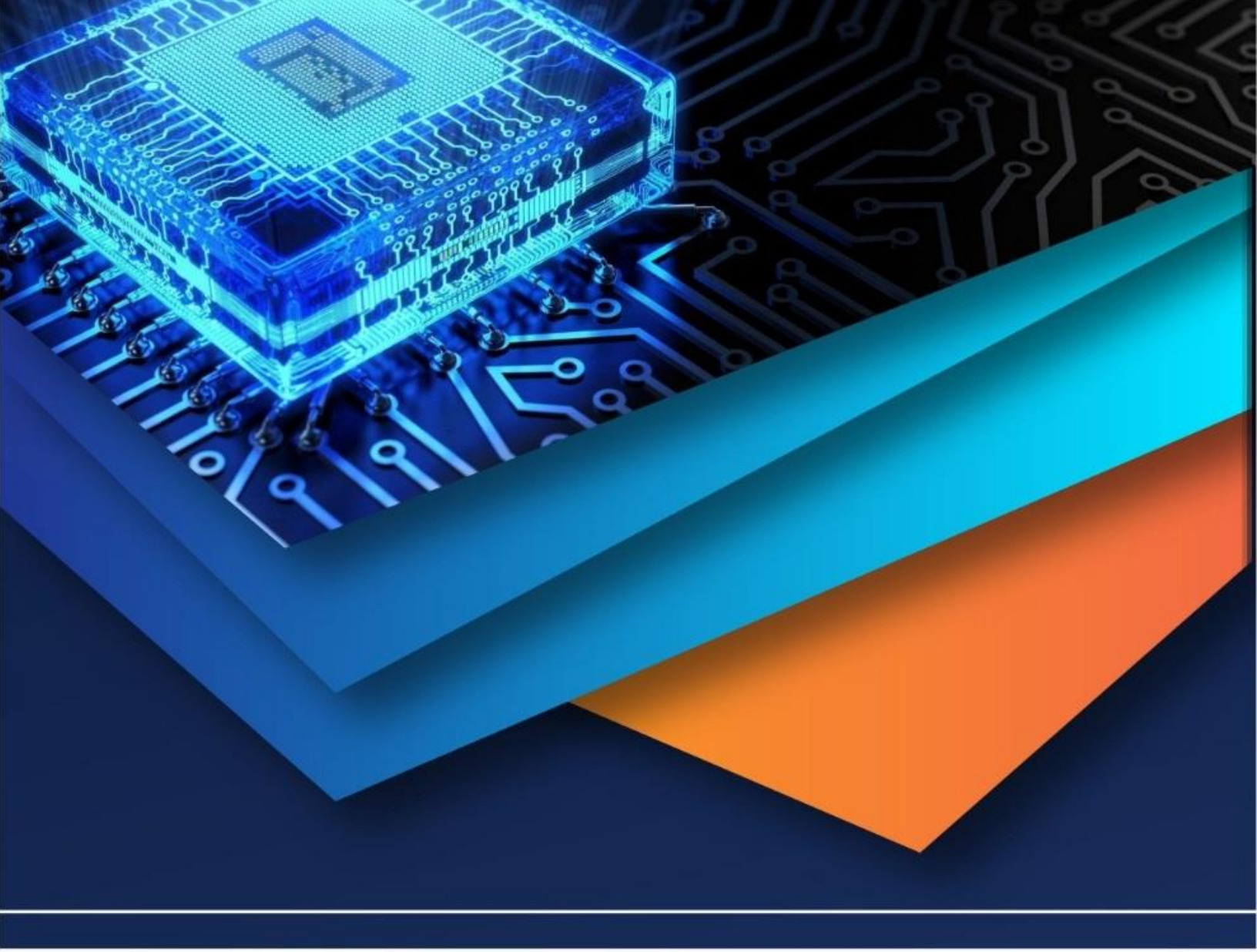

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